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ABSTRACT

Twenty-six autistic adolescents and young adults (22 males, 6 females) participated in two studies of compliance and "negativism." In the first study, Ss were observed to respond differentially to a series of requests which varied in form and level of difficulty. Additionally, when responses to each type of request were dichotomized on the basis of the Ss' compliance, individual differences in responses were observed to form a cumulative, unidimensional, or Guttman, scale. Position on this scale was related to developmental level. In study 2 a series of ambiguous, contradictory and impossible requests were presented to Ss in an attempt to elicit negativism. Ss typically attempted to comply with requests. The two Ss who were most developmentally advanced were able to reflect on the nature of the requests and their inability to comply. Results do not support the notion that autistic individuals are unusually negativistic. (Author/CL)

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Compliance, Noncompliance, and "Negativism"
in Autistic Individuals

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Compliance, Noncompliance, and "Negativism"
in Autistic Individuals

Abstract

Twenty-six autistic individuals enrolled in a day treatment program participated in two studies of compliance and "negativism". In the first study subjects were observed to respond differentially to a series of requests which varied in form and level of difficulty. Additionally, when responses to each type of request were dichotomized on the basis of the subject's compliance, individual differences in response were observed to form a cumulative, unidimensional, or Guttman, scale. Position on this scale was related to developmental level. In the second study a series of ambiguous, contradictory and impossible requests was presented to the subjects in an attempt to elicit "negativism." Subjects typically attempted to comply with the requests. The two subjects who were most developmentally advanced were able to reflect on the nature of the requests and their inability to comply. These results do not support the notion that autistic individuals are unusually "negativistic."

Background

Since Kanner's original (1943) report of the autistic syndrome, many clinicians have reported unusual degrees of "negativism" in this population (Ekstein, et al., 1958; Boatman and Szurek, 1960; Bettelheim, 1960; Zaslow and Breger, 1969). Autistic "negativism" might be a function of the "need to preserve sameness" (Prior, et al., 1973) or developmentally consistent with intellectual skills, i.e. as typical of the oppositional behavior exhibited by toddlers - though available studies (Stayton, et al., 1971; Minton, et al. 1971) suggest that such behavior is not, in fact, typical of younger children. The existence of autistic "negativism" has important practical and theoretical implications. Experimental studies of this issue have produced conflicting results, in part, because of differences in method and definition of the concept.

Definitions of autistic negativism have been both narrow (e.g. "less-than-chance" or inconsistent performance (Cowan, et al., 1965; Morrison, et al., 1971) and broad (e.g. gaze avoidance and social withdrawal). A strict definition of the term would seem to imply deliberate noncompliance with a task which the subject is known to be capable.

Clark and Rutter (1977) reported that performance was a function of developmental level and subsequently (1979) observed that errors made by autistic subjects on the Raven Progressive Matrices were a function of item difficulty rather than "negativism" and that (1981) autistic children's responses varied as a function of the interpersonal demands of the situation and the degree of structure imposed. Jose and Cohen (1980) described unique patterns of noncompliance in autistic children who, in comparison to emotionally and cognitively disturbed subjects, were more likely to engage in self-stimulation, look around the room, and make errors.

Wallace (1975) studied negativism in autistic, behavior-disturbed, and normal children aged 5 to 12 years. Subjects had demonstrated prior competence in a variety of forms of requests (verbal requests for verbal responses, verbal requests for nonverbal responses, and nonverbal requests for nonverbal responses). The nature of the subjects' noncompliance was rated along a continuum of negativism. Normal children uniformly were correct. While there were no significant differences between groups in overall "negativism" scores there were significant differences among the conditions with verbal requests for verbal responses eliciting greater "negativism" than other conditions. Volkmar and Cohen (1982) reanalyzed Wallace's (1975) data by dichotomizing subjects as either compliant or noncompliant based on the frequency with which subjects were correct. Scalogram analysis of the resulting data revealed that the individual children's responses constituted a Guttman, or cumulative and unidimensional scale, which suggested the importance of developmental factors in governing the child's responses.

Several factors might account for the widespread clinical attributions of "negativism" in this population. Such behavior may be more common in less "structured" clinical situations (Schopler, et al., 1971) and may be a function of developmental level (Chapman, 1981; Kopp, 1982; Beal and Flavell, 1982).

In this paper we report two studies of compliance in autistic individuals. Study 1 examines patterns of compliance to different forms of request of different levels of difficulty. In Study 2 a series of ambiguous, contradictory, or impossible requests is presented to the subjects. If autistic individuals are characteristically "negativistic" uniform noncompliance should be observed. Alternatively, if compliance is observed to be a function of request form and difficulty and if individual patterns of response can be related to developmental level there seems little need to invoke the concept of "negativism" as an explanatory variable. In both studies the research was conducted in a familiar setting by a familiar experimenter thus minimizing the effects of novelty of the situation, examiner, and setting and of specific requests (Jose and Cohen, 1980) and maximizing the ecological validity of the data (Lytton, 1973).

Study I

Patterns of Compliance in Response to Various Forms Of Request

Methods

Subjects: Twenty-six autistic adolescents and young adults, 22 males and 6 females, with at least some expressive language and without hearing impairment participated in the study. Ages ranged from fourteen to twenty-six years ($M = 19.5$, $s.d. = 3.88$). The Peabody Picture Vocabulary Test (Dunn and Dunn, 1981) was administered to each subject prior to participation to obtain an index of developmental level. Age equivalent scores on this test ranged from 3 years 1 month to 11 years 5 months with a mean of 5.11 years ($s.d. = 2.20$).

Procedures: Testing was conducted in a familiar setting by a familiar staff member using familiar stimulus materials. The experimental requests consisted of verbal requests for verbal responses, verbal requests for nonverbal responses, nonverbal requests for nonverbal responses (imitation), and nonverbal requests for verbal responses. Half of the twelve presentations within a request type were requests for a single action or response, the other six were more complicated in that two separate actions or responses were requested. The requests were as follows:

Condition A: (Verbal request for verbal response)

Level 1: "Say cat",

Level 2: "Say cat but first say dog".

Condition B: (Verbal request for nonverbal response)

Level 1: "Give me the dog",

Level 2: "Give the dog but first give me the cat."

Condition C: (Nonverbal request for nonverbal response)

Level 1: The experimenter put the cat in the box and points to the subject to indicate the subject's "turn."

Level 2: The experimenter puts the dog on the block and pets the cat and then points to the subject.

Condition D: (Nonverbal request for verbal response)

Level 1: The experimenter pointed to the cat on an array of four animals depicted on a picture card and then pointed to the subject.

Level 2: The experimenter pointed first to the dog and then to the cat and then to the subject.

The simpler requests were presented before the more complicated ones. Sequence of requests was counterbalanced across subjects. Eight sequences of trials were used. Subjects were given six trials of each experimental request for a total of 48 requests per subject. The subjects were given 10 seconds to respond to each request. If a subject had not responded after 10 seconds one additional prompt was given. Responses were termed correct if the subject complied fully with the request, partial if some part of the request has been responded to, and incorrect if the subject had either failed to respond or had responded in a way unrelated to the request. For example, if the subject said anything in response to a verbal request the response would be at least partial. Partial responses were scored since if subjects were truly negativistic they might exhibit such negativism by partially responding to requests. Immediate verbal echoing of requests, i.e. verbatim repetition of the instruction, was scored as a partial response.

Results

Overall subjects responded correctly to 71.5% of all requests, were partially correct in 25.6% of requests, and incorrect in less than 5% of requests. To assess condition and level effects a "negativism" score was calculated by summing the number of partial responses and 2X the number of incorrect responses. A repeated measures analysis of variance was then performed. There were significant main effects of both level of difficulty ($F = 35.52$, $df = 1,25$, $p < .01$) and condition ($F = 3.21$, $df = 3,75$, $p < .05$). The interaction of level and condition was not statistically significant. To examine individual difference effects scalogram analysis was employed as in Volkmar and Cohen's reanalysis of Wallace's data. The number of correct responses for each request type were summed over the two levels of difficulty for each condition and the subject was rated as compliant to a condition if he or she was correct in 2/3rds or more of the presentations and noncompliant if she or he was not correct in more than 1/3rd of presentations. The selection of the cutting point was chosen, a priori, to correspond to that used by Volkmar and Cohen (1982) in their reanalysis of Wallace's (1975) data. The dichotomous data that result from this procedure are presented in Table 1.

Table 1: Scaling of Compliance to Requests

Subj #	Sex	PPVT MA	CA	Condition Request	A V	D NV	C NV	B V	Scale Score
				Response	V	NV	V	NV	
4.	M	3-3	19-9		-	-	-	-	3.5
5.	M	4-2	18-6		-	-	-	-	3.5
6.	M	3-2	20-11		-	-	-	-	3.5
7.	M	2-7	21-8		-	-	-	-	3.5
9.	M	3-4	16-10		-	-	-	-	3.5
16.	M	4-0	23-2		-	-	-	-	3.5
1.	F	3-5	17-9		-	-	-	+	8.5
10.	M	4-0	29-3		-	-	-	+	8.5
15.	M	4-2	23-3		-	-	-	+	8.5
23.	M	7-8	26-1		-	-	-	+	8.5
22.	F	3-10	25-10		-	-	+	+	11.0
2.	F	3-3	18-6		-	+	+	-	12.0
3.	M	4-1	17-3		-	+	+	+	15.0
19.	F	3-4	20-2		-	+	+	+	15.0
20.	M	5-4	22-10		-	+	+	+	15.0
24.	M	5-10	23-7		-	+	+	+	15.0
26.	M	5-1	24-6		-	+	+	+	15.0
8.	F	3-10	17-11		+	-	-	+	18.0
14.	M	8-5	25-9		+	-	+	+	19.0
11.	F	9-1	15-5		+	+	+	+	23.0
12.	M	5-5	24-3		+	+	+	+	23.0
13.	M	4-10	27-1		+	+	+	+	23.0
17.	M	11-7	24-4		+	+	+	+	23.0
18.	M	5-8	17-2		+	+	+	+	23.0
21.	M	8-1	21-9		+	+	+	+	23.0
25.	M	6-6	27-5		+	+	+	+	23.0

Notes: V= Verbal, NV= Nonverbal, + = compliant ($\geq 67\%$ correct),
 - = noncompliant ($< 33\%$ correct).

An examination of the table reveals an underlying pattern of the data similar to that observed by Volkmar and Cohen (1982). In the table, subjects are arrayed such that the +'s (indicating compliance) form a stairway from bottom left to top right of the table. Subjects were most likely to respond correctly to verbal requests for action and least likely to respond to verbal requests for verbalization. The six subjects whose data are represented by the top rows of the table were uniformly noncompliant while the seven subjects represented by the bottom seven rows of data were uniformly compliant. Arrayed between these two extremes are the remainder of the sample. This stairway structure perfectly represents the responses for all but three subjects. When evaluated by scalogram analysis the data's coefficient of reproducibility (.94) represents a 32% improvement over the minimum marginal reproducibility of .61. The coefficient of scalability (.85) is above the minimum value needed for a Guttman scale. By assigning a rank to each subject based on his or her position in the scale it is possible to derive yet another measure of compliance based on the pattern of observed individual differences. Spearman correlation of scale rank and PPVT age equivalent scores ($r_s = .70$, $p < .001$) suggested the importance of developmental level in determining scale position and compliance. Neither sex of subject nor sequence of presentation effects achieved statistical significance. Chronological age correlated only modestly and insignificantly (.21) with scale position.

Discussion

The observation of an underlying pattern of compliance to the various request types replicates Volkmar and Cohen's earlier (1982) report. The particular pattern of compliance suggests the need for additional research, e.g., with normally developing preschool subjects. The difficulty with expressive language tasks and imitation that autistic people exhibit may account, in part, for the pattern of results (O'Gorman, 1967; Morrison et al., 1971; Simmons and Baltaxe, 1975) though in normally developing toddlers non-linguistic strategies may be used in responding to simple requests (Clark, 1973). Other aspects of requests, e.g. word order (Wetstone and Friedlander, 1973), may also be important determinants of the ability to comply. Previous reports (e.g. DeMyer et al., 1972) have suggested that autistic individuals are more likely to correctly imitate object manipulation, as was the case in this study, as compared to imitation of body movements. The positive association of compliance with developmental level is in accord with previous reports (e.g. Clark and Rutter, 1979; Jose and Cohen, 1980) and suggests that when observed in a familiar setting with a familiar person compliance and noncompliance vary as a function of the type of request made to the subject and the subject's developmental level. If the concept of autistic "negativism" is invoked to explain the result such negativism appears to be selective, i.e. it is related to type of request and level of difficulty and to developmental level.

Study II

Responses to Impossible, Ambiguous, and Inconsistent Requests

The twenty-six autistic subjects and examiner who participated in Study I also participated in this study. Testing was conducted one week after each subject had participated in the first study. Three separate series of requests were presented to the subjects. Order of requests was counterbalanced over subjects.

Impossible Requests: The examiner produced four small, blue, orange, green and brown dinosaurs and identified each dinosaur by its scientific name and then asked a series requests for a color not present, e.g. "hand me the red one." The six colors requested were red, black, yellow, purple, gray, and white. If the child failed to respond after 15 second the examiner repeated the request once. After the last of the six requests the examiner asked for the correct colors; subjects were uniformly compliant to these requests.

Contradictory Requests: The examiner next produced five objects: a small box, a wooden block, a toy car, and a small dog and cat. Each subject was asked to identify each object and all did so. The examiner then began a series of contradictory requests in which the verbal instruction was contradicted by the examiner's action, e.g., the examiner said "put the cat in the box" while simultaneously modeling putting the dog on the block. The contradictory requests are listed in Table 3. The examiner waited 10 seconds for a response; no additional prompts were given. Responses were termed verbal if the subject followed the verbal instruction, nonverbal if the subject imitated the modeled behavior, and combination if the subject responded to some element of both requests.

Ambiguous Requests: After the last of the contradictory requests the block and box were removed leaving only the black cat, white dog, and red car displayed for the subject. The examiner then proceeded to ask the subject for one of the objects using an incorrect color name, e.g. "Give me the red cat", etc. (see table 4). Subjects were rated as responding to color only, name only, or both color and name (e.g. handing the red car and the black cat). Responses which included neither the item mentioned nor the color named were never observed.

Results

All subjects demonstrated a knowledge of the four colors presented in the first task. The responses to the the series of impossible requests (asking for a color not present) are presented in Table 2.

Table 2: Compliance to Impossible Color Requests

<u>Requested Color</u>	<u>Response</u>									
	<u>Orange</u>		<u>Brown</u>		<u>Blue</u>		<u>Green</u>		<u>"Can't do it"</u>	
	N	%	N	%	N	%	N	%	N	%
RED	22	84	3	12	1	38	0	0	0	0
BLACK	2	8	17	69	5	19	0	0	2	8
GRAY	2	8	5	19	6	23	11	42	2	8
WHITE	4	15	5	19	9	35	6	23	2	8
PURPLE	3	12	9	35	8	31	4	14	2	8
YELLOW	8	31	5	19	3	19	6	23	2	8

Subjects generally attempted to comply with the examiner's request. In only one case a subject failed to respond without explanation; two other subjects, those with the highest PPVT mental ages, responded by saying "I can't do it" or "It's not there." When a related color (e.g. orange for red) was available subjects selected it.

Table 3 presents the responses of subjects to contradictory requests in which the verbal request was contradicted by the action model presented by the examiner.

Table 3: Responses to Contradictory Requests

<u>Request</u>		<u>Response</u>					
		<u>Verbal</u>		<u>Nonverbal</u>		<u>Combination</u>	
<u>Verbal Instruction</u>	<u>Nonverbal Model</u>	N	%	N	%	N	%
1. Cat in box - dog on block		10	38	7	27	9	35
2. Dog on block - cat on car		12	46	6	23	8	31
3. Dog in box - car on block		11	42	6	23	9	35
4. Car in box - dog on block		12	46	6	23	8	31
5. Dog on block - cat in box		12	46	10	38	4	15
6. Dog on car - cat on block		10	38	6	23	10	38

In every case subjects responded to some portion, either verbal or nonverbal, of the request. Neither sequence of presentation nor sex of subject effects were observed. However, a Kruskal-Wallis one way analysis of variance of the frequency with which subjects responded to the

verbal portion of the request on PPVT age equivalent score was significant ($\chi^2 = 15.28$, $df=5$, $p<.02$) as was an analysis on scale position as determined in study 1 ($\chi^2 = 10.72$, $p<.02$) again suggesting the importance of development level on the response strategies of subjects. That is, the more linguistically advanced subjects were more likely to respond to the verbal instruction.

Table 4 presents the responses of subjects to the various ambiguous requests.

Table 4: Responses to Ambiguous Requests

Request	RESPONSE*				χ^2	p<
	Color	Name	Both	Neither		
1. "Give me the red cat"	3	19	1	3	32.46	.001
2. "Give me the black car"	2	23	1	0	56.15	.001
3. "Give me the brown dog"	3	19	1	3	32.46	.001
4. "Give me the car that is white"	1	23	1	1	55.85	.001
5. "Give me the cat that is brown"	5	20	1	0	39.53	.001
6. "Give me the dog that is red"	2	19	1	4	38.06	.001

*Both - subject responds to both color and object named.

Neither - subjects responds to neither color nor object named,

Subjects rarely failed to respond to either color or object named. χ^2 one-sample tests were performed on the frequency of color vs. name responses; subjects were significantly more likely to respond to the object named rather than the color mentioned. This was true regardless of whether color or object was mentioned first or last, i.e. subjects did not respond simply to the last portion of the instruction. Again neither sequence of presentation nor sex of subject effects were observed.

Discussion

The results can be briefly summarized. When asked to do impossible, ambiguous, or contradictory tasks the subjects typically attempted to comply. The strategies subjects used, e.g. responding to one or the other aspect of the request, were predictably related to developmental level as measured by the Peabody Picture Vocabulary Test. The highest functioning subjects were, on occasion, able to reflect on the nature of the request and verbally indicate their inability to comply with it. Given the

apparent cognitive prerequisites for reflecting on the nature of such requests (Beal and Flavell, 1982) it is not surprising that more subjects were incapable of this "metacognitive" ability.

Previous reports have suggested that compliance is a function of the autistic child's intrinsic ability (Alpern, 1967) and extrinsic factors such as adult attention or verbalization (Churchill and Bryson, 1972; Hughes et al., 1983). Procedures which facilitate task completion increase autistic children's motivation to persist (Koegel and Egel, 1979). The results of the present study do not suggest that autistic persons are unusually "negativistic" rather it suggests that even when faced with impossible or contradictory requests they attempt to comply. With the exception of Cowan's original (1965) study subsequent investigations, in which "negativism" was strictly defined, have generally failed to confirm the clinical impression of widespread "negativism" in autistic children. Rather, performance seems more predictably related to task difficulty, novelty of the situation and examiner, and structure. In a previous study (Volkmar, Hoder, and Cohen, 1985) a group of autistic individuals observed in their familiar residential environment were also observed to generally comply with requests. The observed hierarchies in patterns of compliance highlights the importance of developmental factors in eliciting compliance.

How then may the widespread clinical impressions of "negativism" in this population be understood? The apparent predictability of autistic individuals responses to ambiguous communications and the almost uniform attempt by such individuals to respond suggests that, in part, earlier clinical impressions of "negativism" in this population may have been a function of the less structured, psychotherapeutic approaches employed in early therapeutic interventions. In addition, the frequency with which subjects partially respond, i.e. respond to some portion of the request, may have facilitated earlier impressions of "negativism." Partial responses might be understood either as willful noncompliance to an entire request or might, more probably, reflect limited cognitive capacity - i.e. the child attempts to comply with that portion of the request which he or she understands. Finally, instances of willful noncompliance or negativism, may, on occasion, be observed. However, the results of these studies suggest that such negativism does not appear to be characteristic and suggests that developmental factors more parsimoniously explain autistic individual's performance.

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